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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,680	10/29/2003	James Frederick Harrington JR.	21486-056	5034

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EXAMINER	
RAMACHANDRAN, UMAMAHESWARI	
ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,680	HARRINGTON, JAMES FREDERICK	
	Examiner	Art Unit	
	Umamaheswari Ramachandran	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-20* is/are rejected.

7)☒ Claim(s) *17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-20 are pending.

Objection to Specification

The word pump is spelled as 'trump' in line 13 of the specification. Appropriate correction is required.

Claim Objections

Claim 10 is objected to because of the following informalities: The spelling of the compound, LAP-3 is incorrect. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13,15,16,19-20 are rejected under 35 U.S.C 103(a) as being unpatentable over Lawand et al. (Euro J of Pharmacology, 324, (1997), 169-177) in view of Stanfa et al. (Neuroscience, 1999, vol. 93, No. 4, p 1391-1398) and further in view of Garrett (Biol. Res. for Nursing, Vol. 1, No. 4, Apr 2000).

Lawand et al. teaches the intra-articular injection in knee joint of either an NMDA or a non-NMDA glutamate receptor (CNQX) attenuated the thermal hyperalgesia and the mechanical allodynia produced by glutamate, arginine and aspartate (see Abstract). This addresses claims 1-4, 7, 12, 15, 16 and 20. The reference also teaches that the administration of MK-801 reduced the induced thermal hyperalgesic response (p 174,

col. 2, lines 26-27) and thus addresses claims 5 and 6. The reference does not teach a method of alleviating pain by administering KA receptor antagonists, metabotropic glutamate receptor antagonists and binding of free glutamate to mGlu2 receptor.

Stanfa et al. teaches the administration of non-NMDA receptor antagonists NBQX (AMPA, GluR1-4 subunit) and LY383884, a KA receptor antagonist directly to the spinal cord of rats (col. 1, p 1392). The reference teaches the enhanced role of antagonists in spinal nociceptive processing in inflammatory states (see Abstract) thus addressing claims 8 and 11. The reference does not teach a method of alleviating pain by administering metabotropic glutamate receptor antagonists.

Garrett teaches that L-AP3 a metabotropic glutamate receptor antagonist exhibited an antinociceptive effect in animals linking effective treatment of hyperalgesia with metabotropic glutamate receptor (p 316, col. 2, lines 5-9). This addresses claims 9 and 10.

It would have been obvious to one skilled in the art to use NMDA and non-NMDA receptor antagonists in a method of treatment to alleviate pain. The motivation to do is provided by Lawand et al., Stanfa et al. and Garrett. Lowland et al. teaches the potential role of NMDA and non-NMDA receptors in nociception and attenuation of pain-related behaviors by application of NMDA and non-NMDA receptor antagonists after full development of knee joint inflammation. The reference further teaches the treatment by the antagonists as a novel and viable alternative for pharmacological reduction of join pain associated with inflammation (p 177, col. 2. lines 2-7). Stanfa et al. teaches that GluR5 receptors due to their restricted location may represent a better analgesic target,

as antagonists of this receptor are likely to be associated with less side-effects at least at the spinal level. Garett teaches the crucial role of excitatory amino acid, glutamate, NMDA and non-NMDA receptors in pain transmission, pain modulation, central sensitization and the sensation of hyperalgesia (see Abstract, p 311, col. 1, lines 15-44). The reference further teaches that L-AP3 a metabotropic glutamate receptor antagonist exhibited an antinociceptive effect in animals linking effective treatment of hyperalgesia..

Claim 18 is rejected under 35 U.S.C 103(a) as being unpatentable over Lawand et al. (Euro J of Pharmacology, 324, (1997), 169-177) in view of Stanfa et al. (Neuroscience, 1999, vol. 93, No. 4, p 1391-1398) and further in view of Garrett (Biol. Res. for Nursing, Vol. 1, No. 4, Apr 2000) as applied to claims 1-13,15,16,19-20 above and further in view of Takahashi et al. (Pain, 75 (1998), 391-394).

Lawand et al., Stanfa et al. and Garrett do not teach an epidural administration of glutamate receptor antagonist.

Takahashi teaches the epidural administration of NMDA receptor antagonist ketamine to relieve neuropathic pain (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to develop a method of treatment to alleviate pain by administering glutamate receptor antagonist epidurally as the reference teaches a low dose of administration of NMDA receptor antagonist is sufficient to block activated NMDA receptors in dorsal horn neurons and is an effective choice for the management of neuropathic pain without any undesirable side effects (p 394, col. 1, lines 12-16).

Claim 14 is rejected under 35 U.S.C 103(a) as being unpatentable over Lawand et al. (Euro J of Pharmacology, 324, (1997), 169-177) in view of Stanfa et al. (Neuroscience, 1999, vol. 93, No. 4, p 1391-1398) and further in view of Garrett (Biol. Res. for Nursing, Vol. 1, No. 4, Apr 2000) and further in view of Takahashi et al. (Pain, 75 (1998), 391-394) as applied to claims 1-13, 15, 16, 18-20 above and further in view of Harrington et al. (Spine. 2000 Apr 15;25(8):929-36).

Lawand et al. Stanfa et al. Garrett and Takahashi et al. do not teach a method of alleviating pain by administering glutamate receptor antagonists to invertebrate disc.

Harrington et al. teaches that disc radiculopathy can be treated with epidural glutamate receptor antagonists.

It would have been obvious to one skilled in the art to use glutamate receptor antagonists in the method of treatment to alleviate pain in intervertebral disc. The motivation to do so is provided by Harrington et al. The reference teaches that glutamate originating from degenerated disc may diffuse to the dorsal root ganglion and effect glutamate receptors (see Abstract, conclusions) and DRG has high density of glutamate receptors associated with nociception (p 929, col 2. lines 30-31). The reference further teaches the injections of glutamate receptor antagonists may be beneficial in the treatment of radicular pain and other types of spinal pain (col. 1, p 935, lines 13-16).

Objections to claims

Claim 17 is objected to as being dependent upon rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Umamaheswari Ramachandran whose telephone number is 571-272-9926. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER